

Salmon Fishery Enhancement production trends, management issues, and planning efforts

**A Presentation to the Alaska Board of Fisheries
Per the Joint Protocol on Salmon Enhancement**

#2002-FB-215

3/8/2019

Alaska Department of Fish and Game

Sam Rabung

October 16, 2018, Board of Fisheries meeting

Legal Guidance

Enhanced Production of Salmon

Previous Hatchery Program Reviews

Results of Program to date

March 8, 2019, Board of Fisheries meeting

Enhanced Production Trends

Management Issues

Planning Efforts



ADF&G Mission Statement

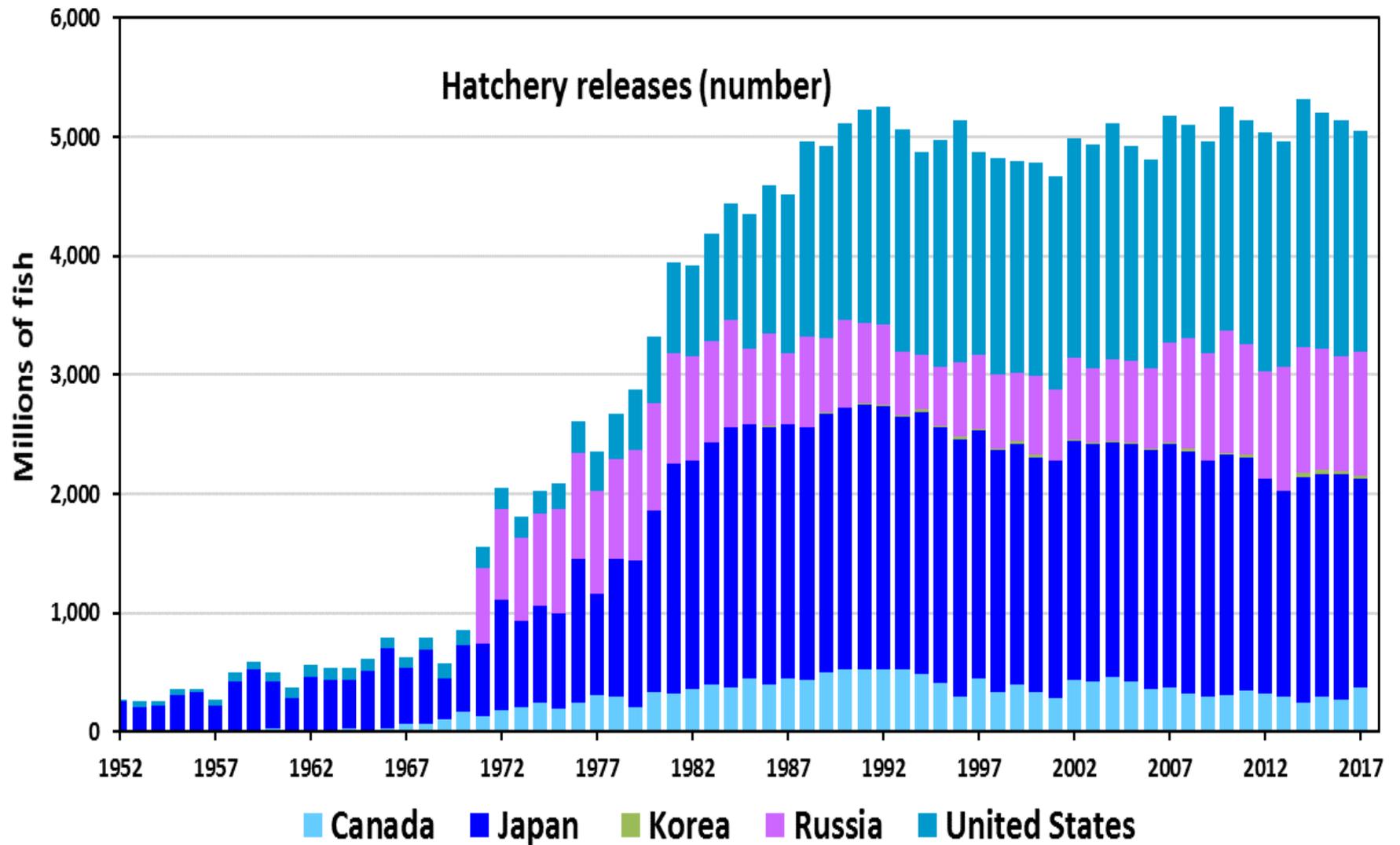
To **protect, maintain, and improve** the fish, game, and aquatic plant resources of the state, and **manage** their **use** and **development** in the best interest of the **economy** and the **well-being** of the people of the state, consistent with the **sustained yield principle**.

ENHANCED PRODUCTION OF SALMON

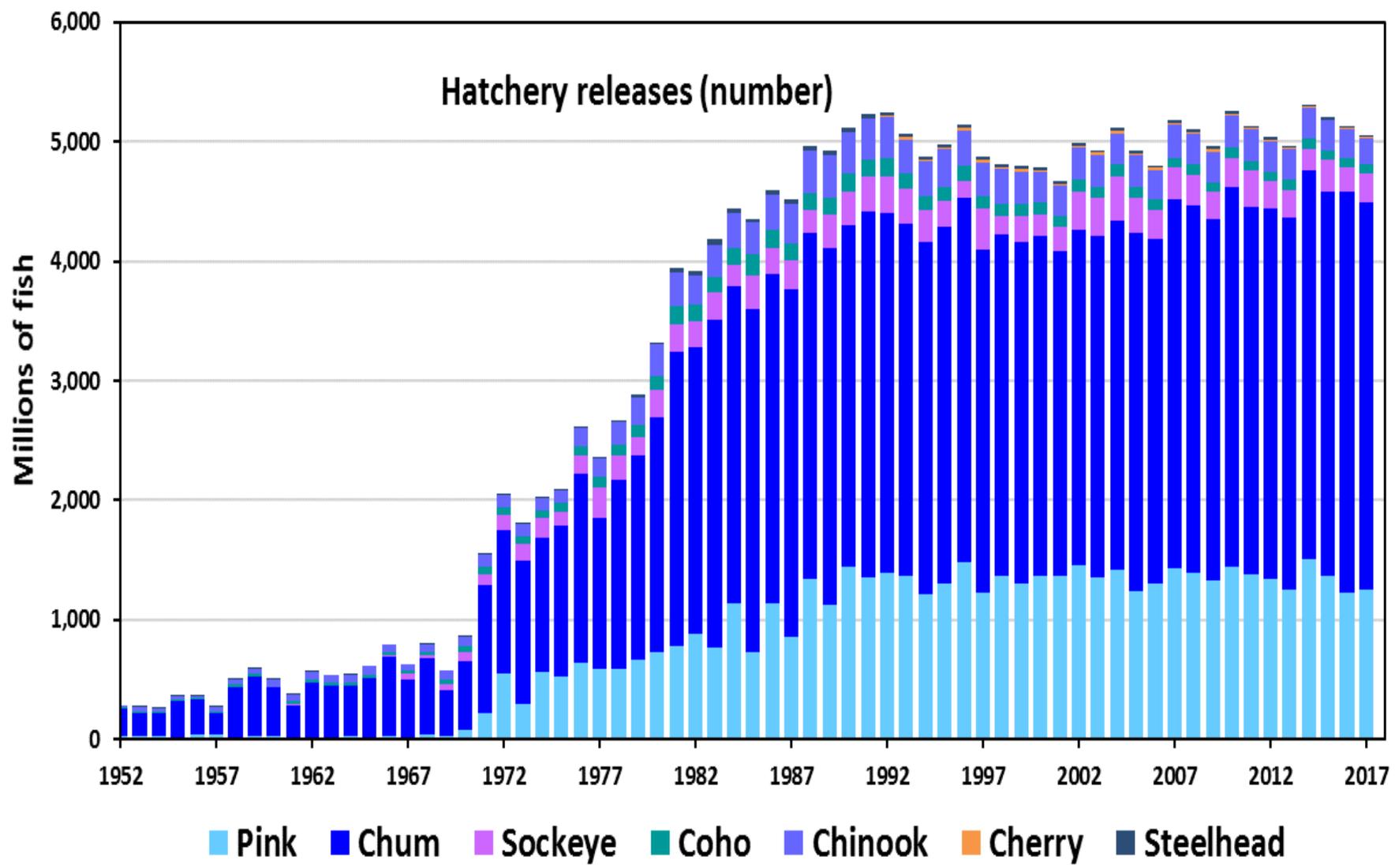
North Pacific Production

Statewide Production

Regional Production



Data Source: North Pacific Anadromous Fish Commission (NPAFC). 2018. NPAFC Pacific salmonid hatchery release statistics (updated 31 July 2018). North Pacific Anadromous Fish Commission, Vancouver. Accessed July, 2018. Available: www.npafc.org



Data Source: North Pacific Anadromous Fish Commission (NPAFC). 2018. NPAFC Pacific salmonid hatchery release statistics (updated 31 July 2018). North Pacific Anadromous Fish Commission, Vancouver. Accessed July, 2018. Available: www.npafc.org

ANNUAL REPORT

AS 16.05.092

Regional Information Report No. 5J18-02

Alaska Salmon Fisheries Enhancement Annual Report 2017

by
Mark Stopha

On 4/9/2018, Table 10 was revised. The total projected return by facility and species, however, remained essentially the same as the original table.

On 5/31/2018, Table 32 was revised to correct the permitted pink salmon egg capacity for AFK and Solomon Gulch hatcheries for the 2017 season.

March 2018

Alaska Department of Fish and Game

Division of Commercial Fisheries

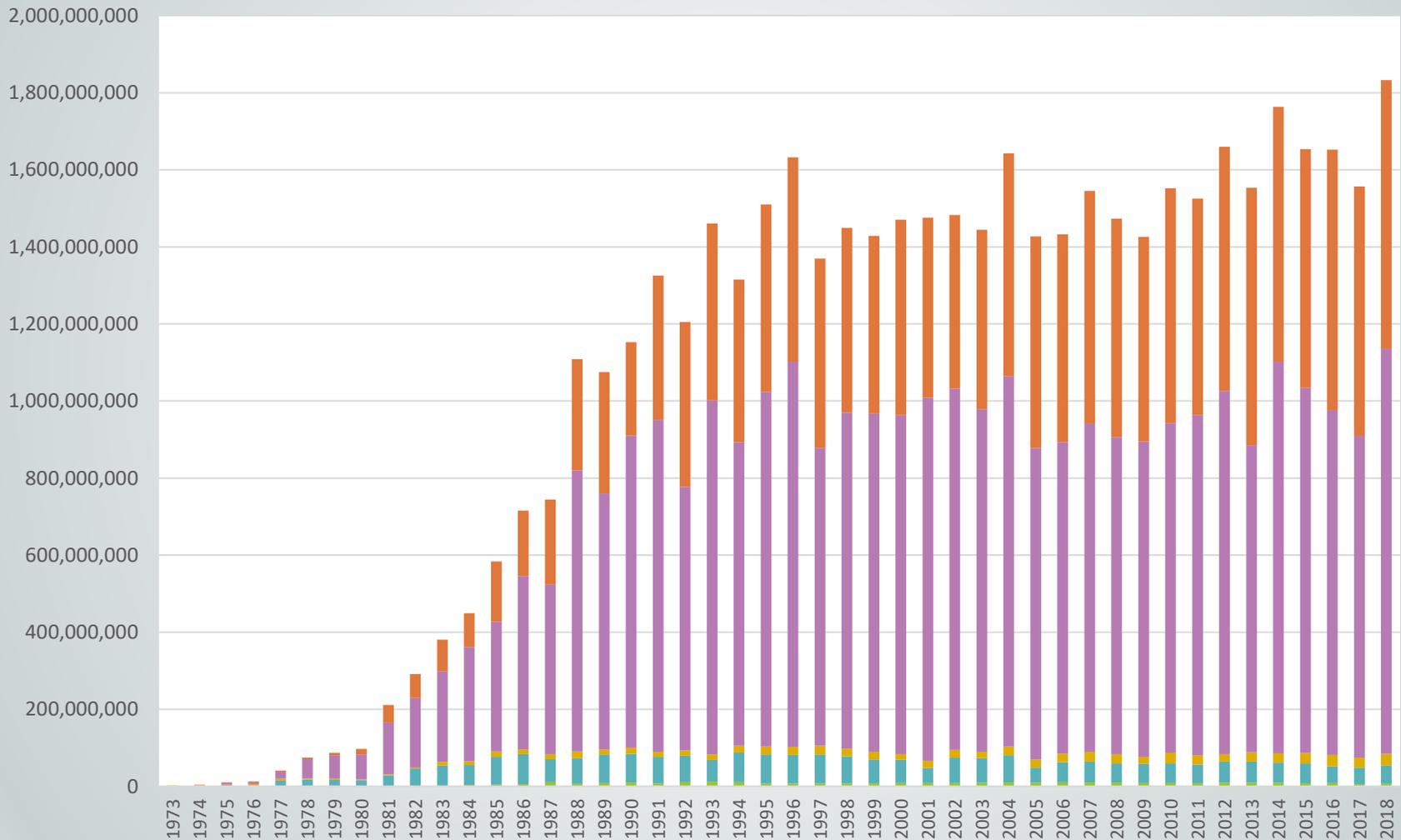


3/6/2019

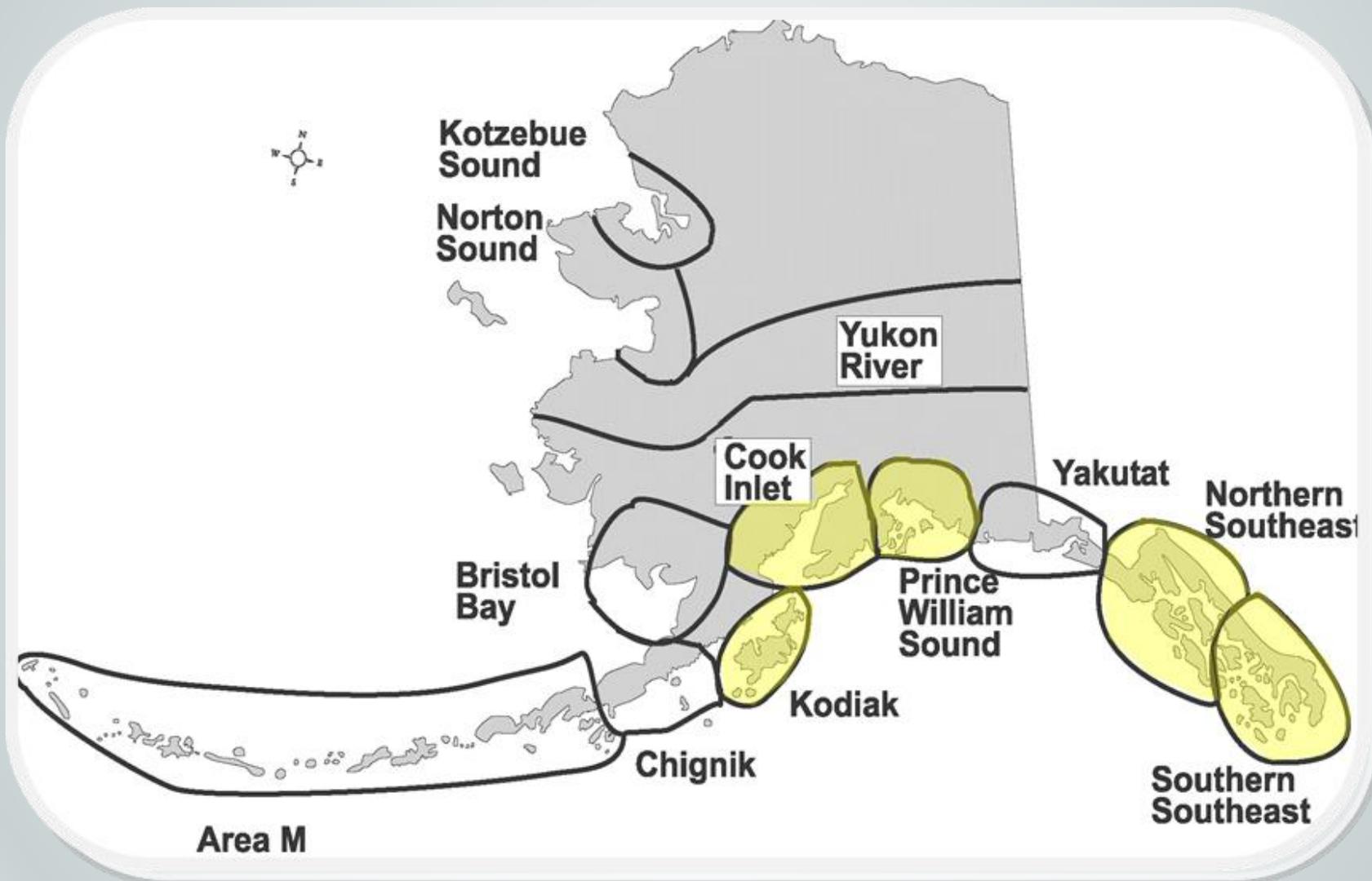
8

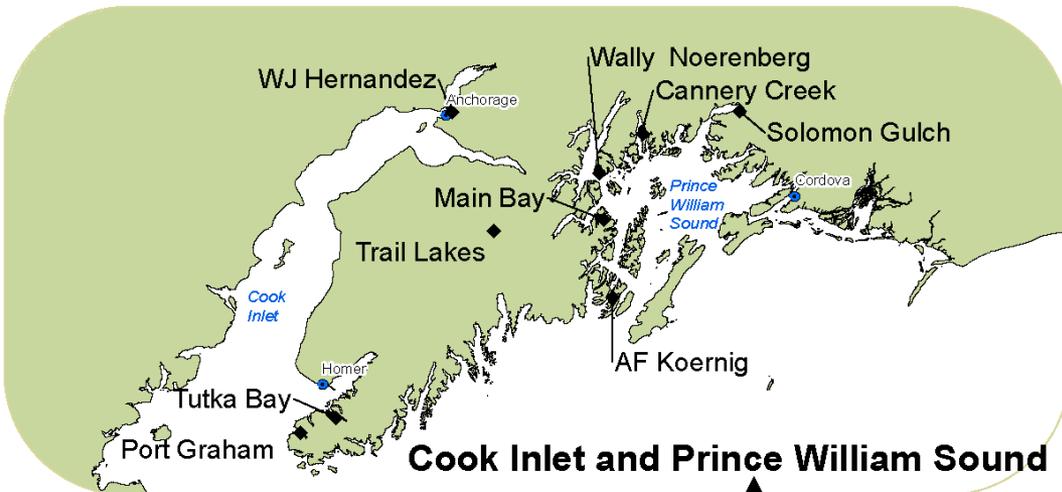
Statewide Hatchery Releases 1973-2018

king sockeye coho pink chum



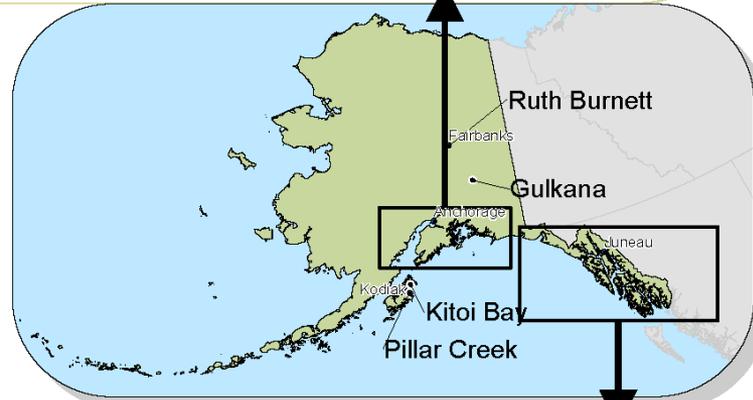
SALMON FISHERY ENHANCEMENT REGIONS



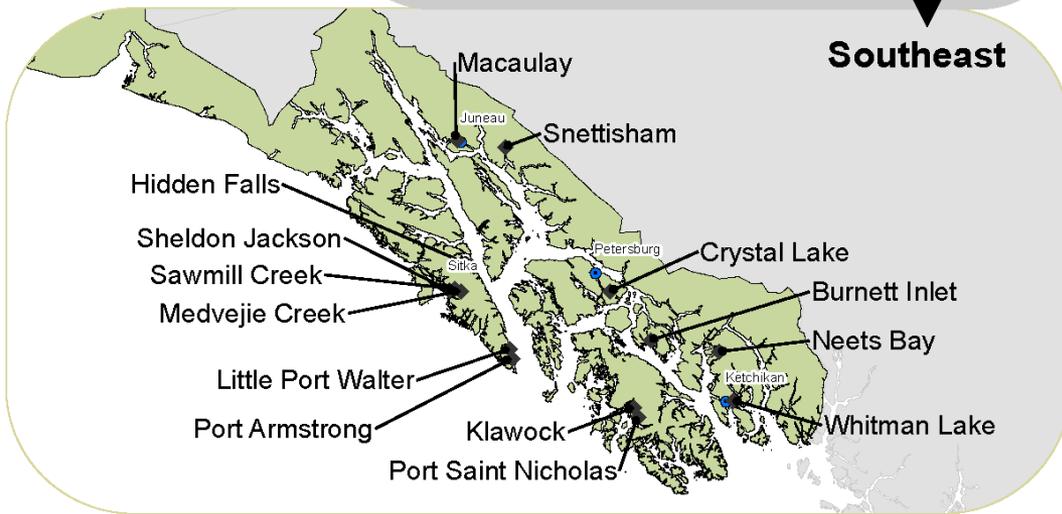


Cook Inlet and Prince William Sound

**Locations of
Alaska
Hatcheries**

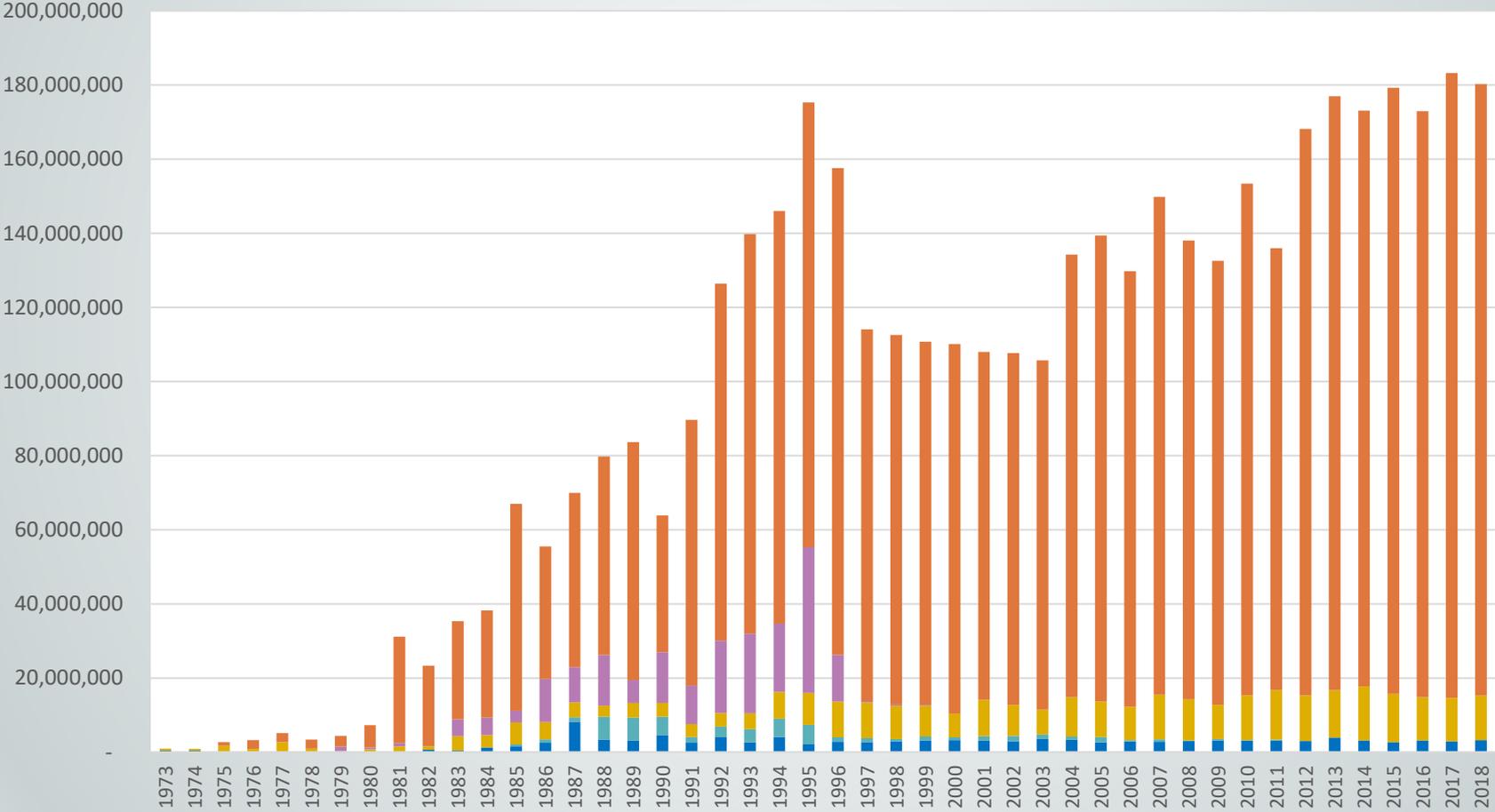


Southeast



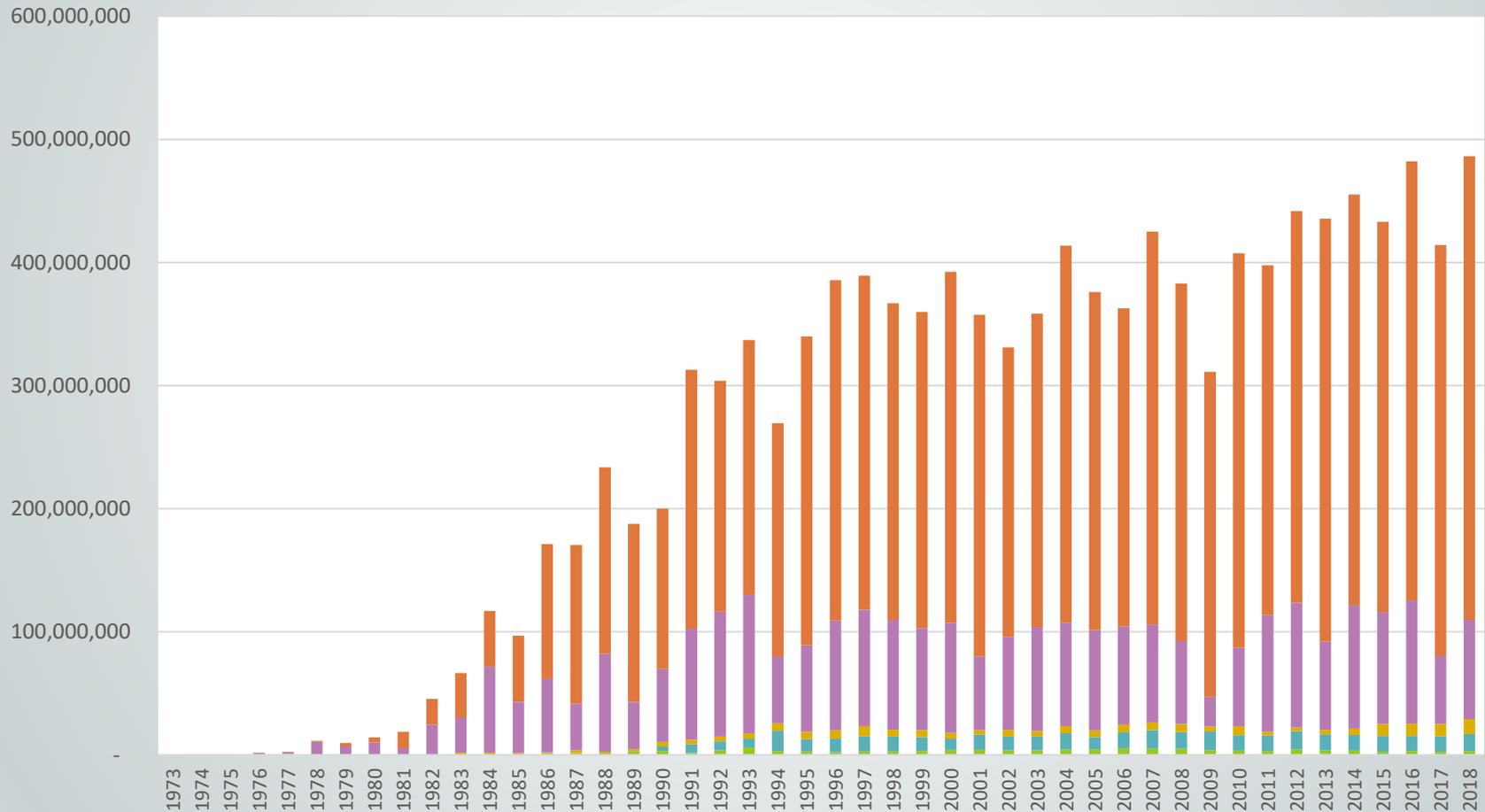
Southern Southeast Region Hatchery Releases 1973-2018

king sockeye coho pink chum



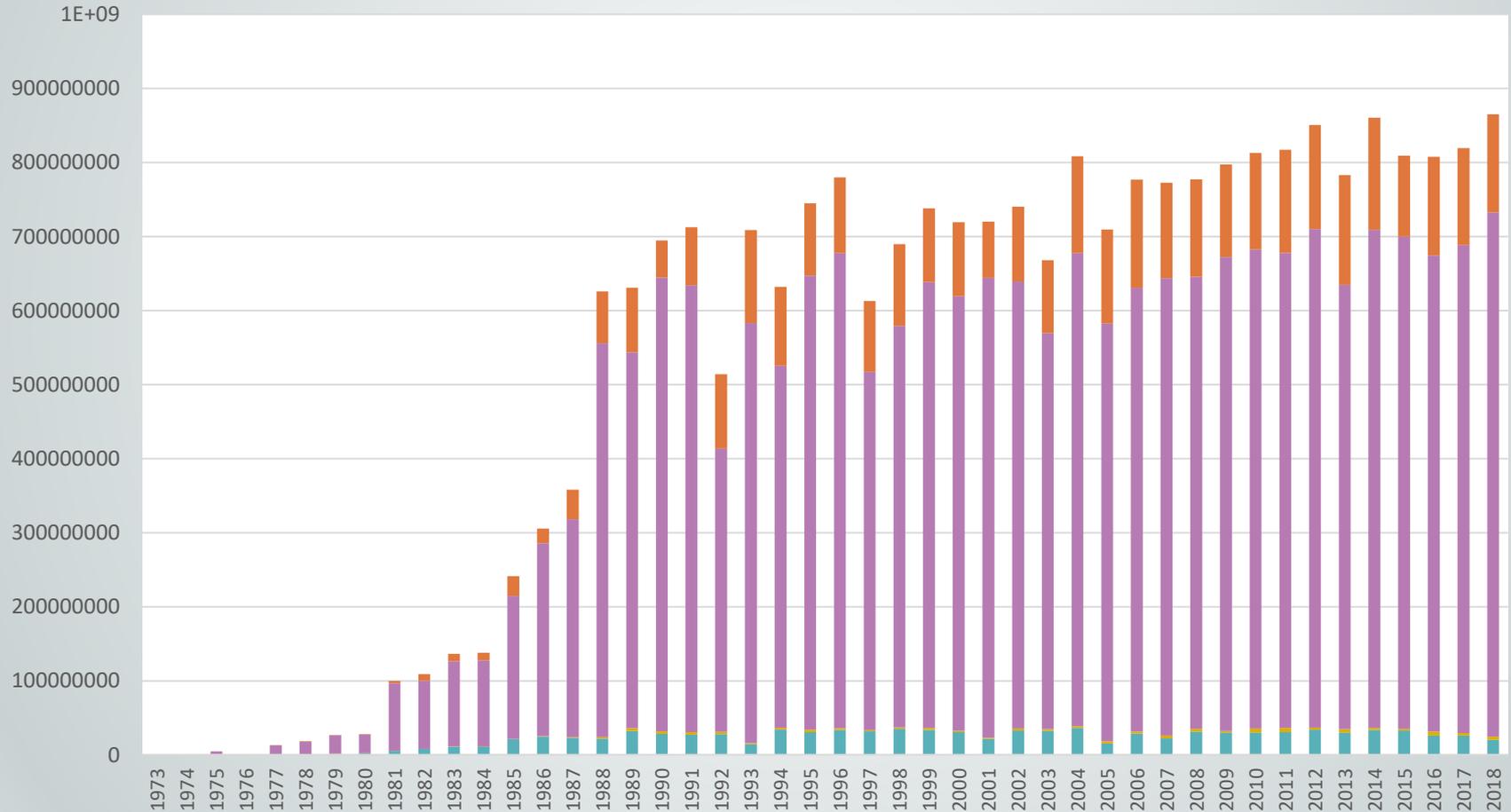
Northern Southeast Region Hatchery Releases 1973-2018

king sockeye coho pink chum



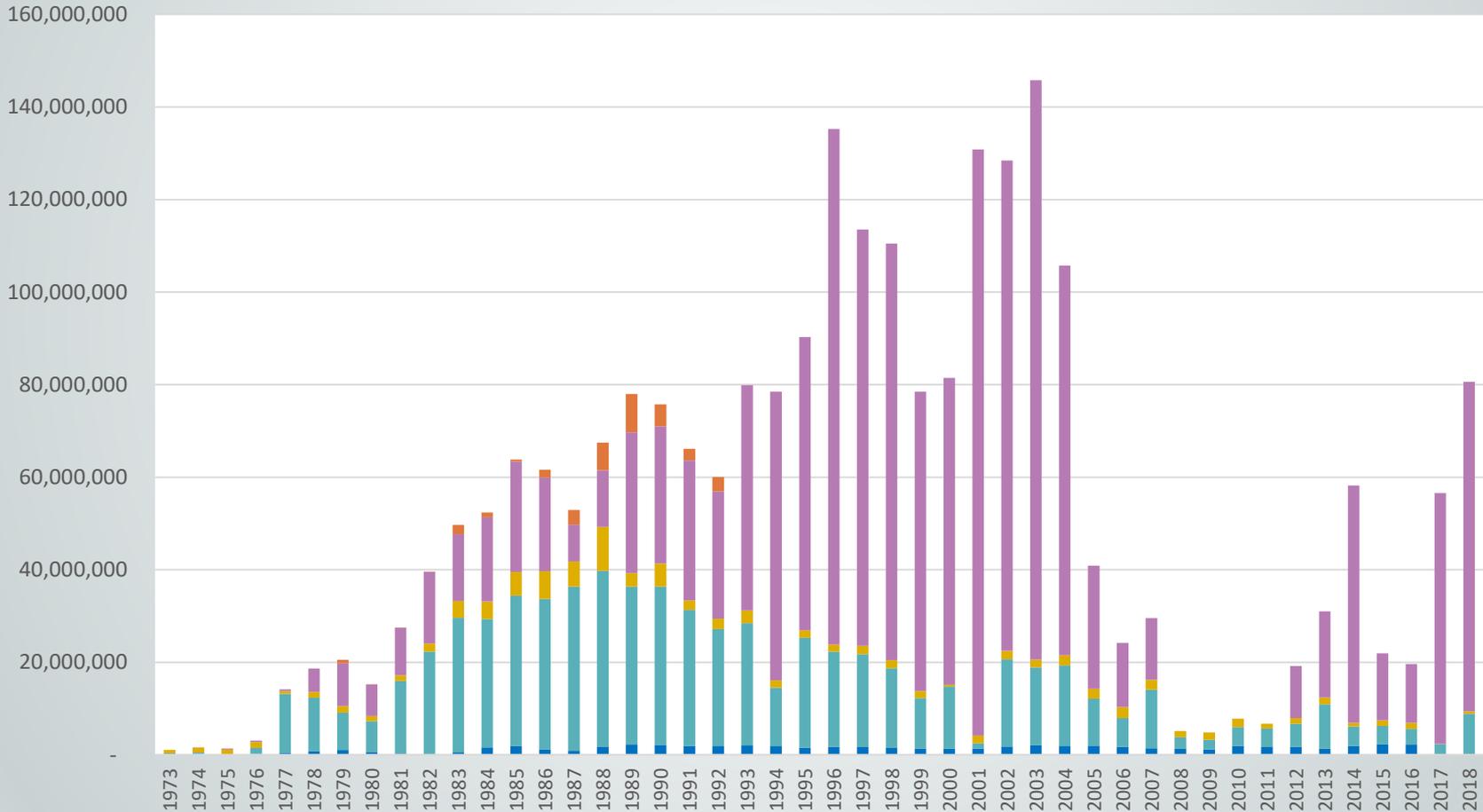
Prince William Sound Region Hatchery Releases 1973-2018

king sockeye coho pink chum



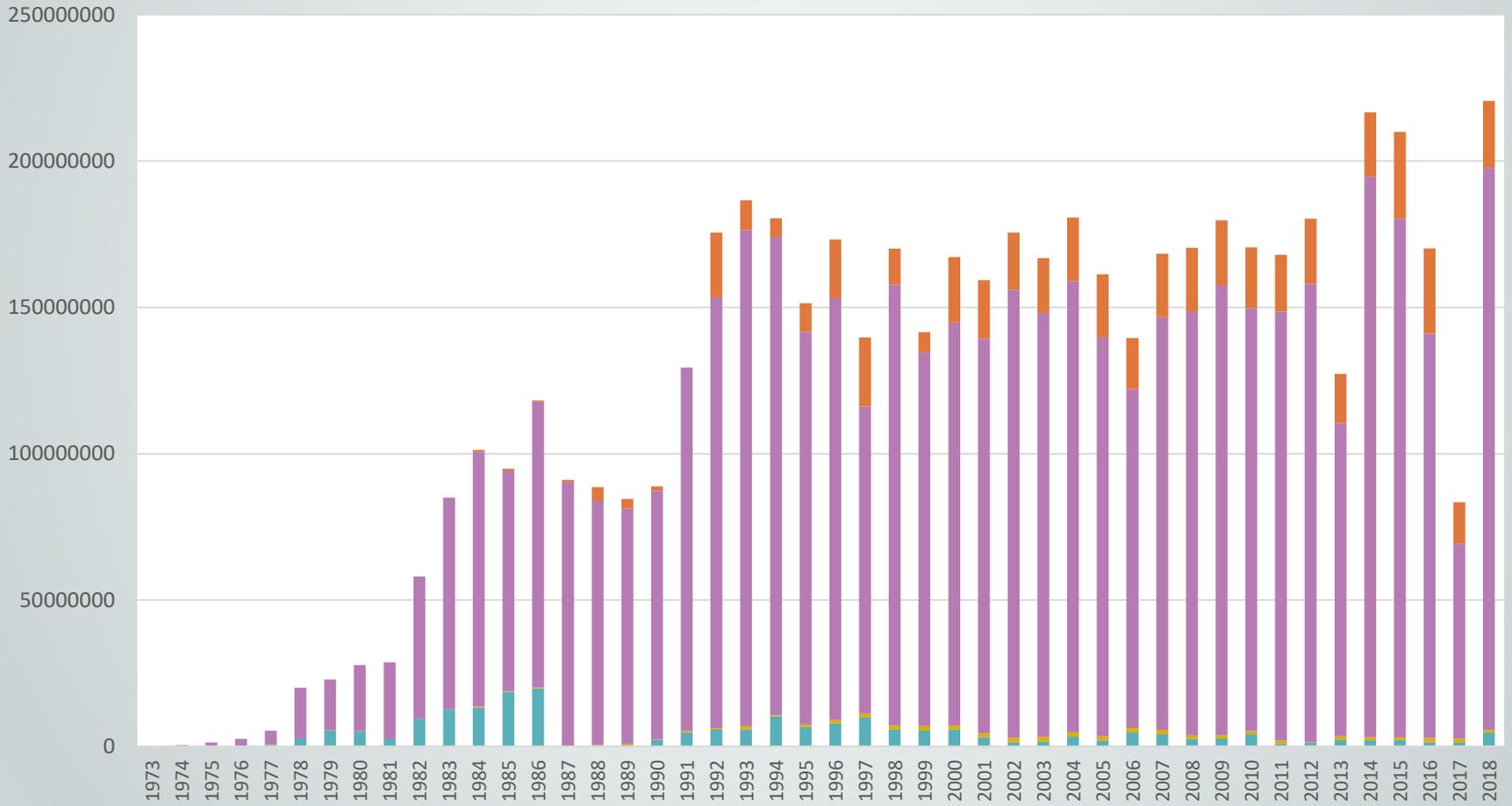
Cook Inlet Region Hatchery Releases 1973-2018

■ king
 ■ sockeye
 ■ coho
 ■ pink
 ■ chum

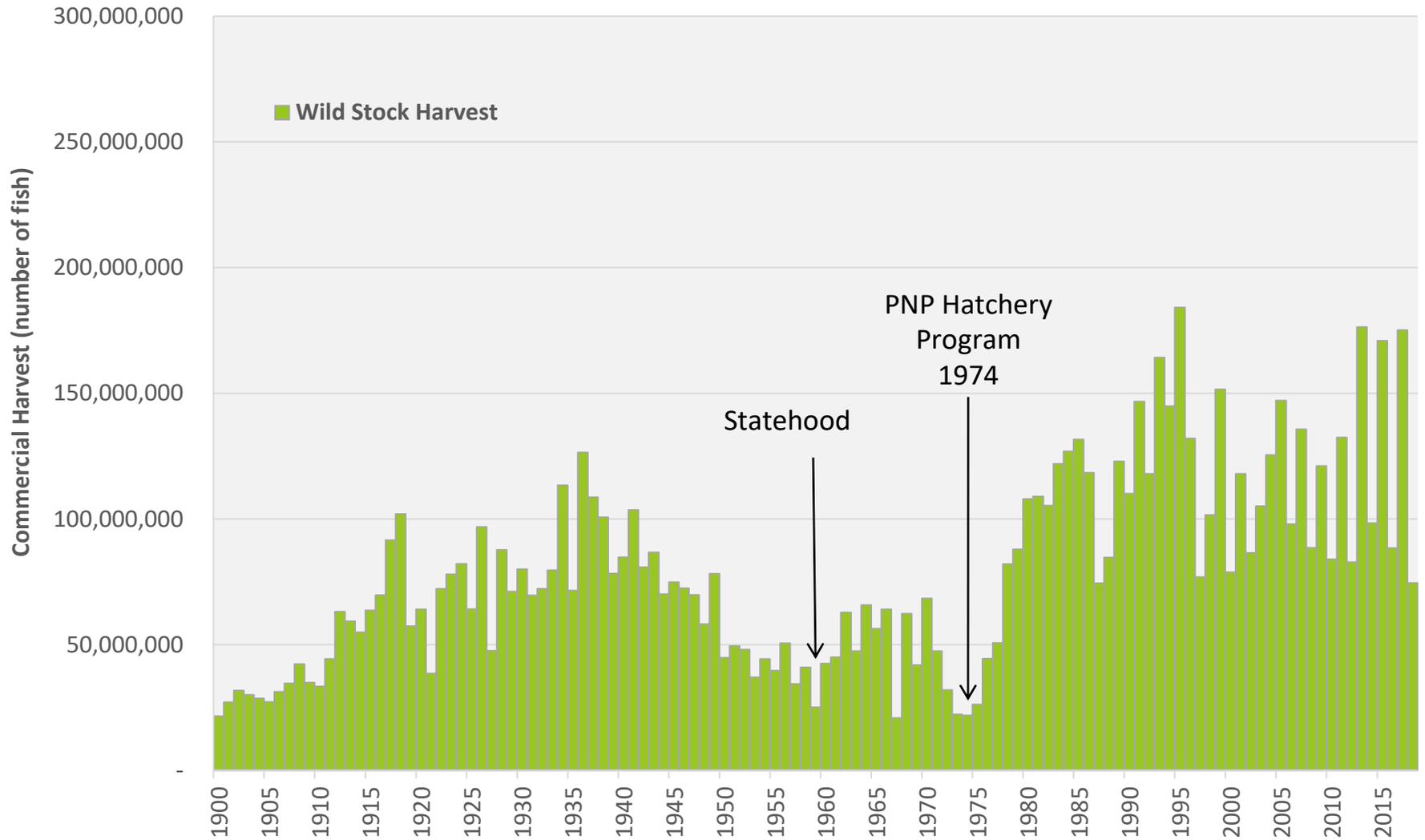


Kodiak Region Hatchery Releases 1973-2018

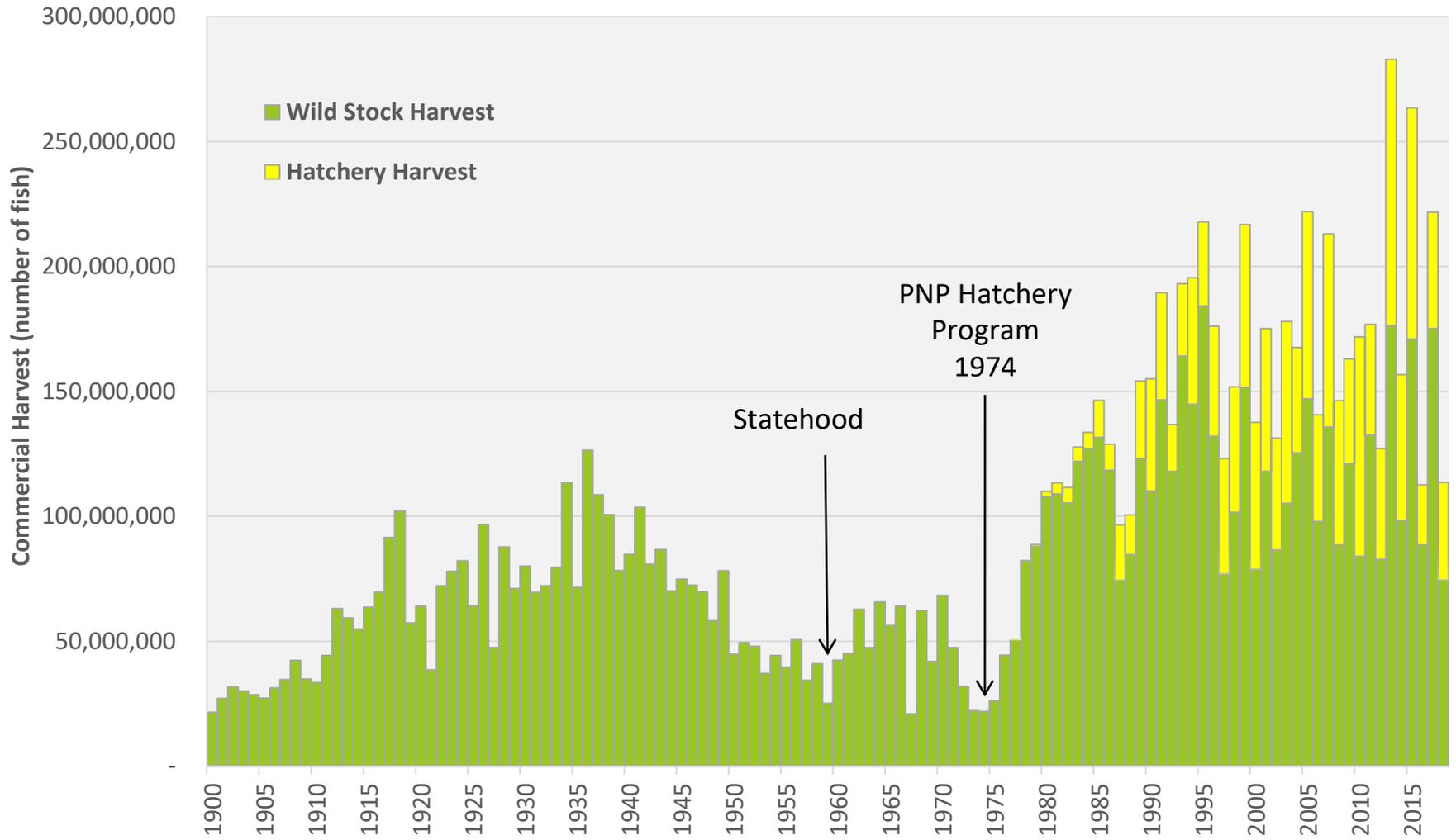
■ king
 ■ sockeye
 ■ coho
 ■ pink
 ■ chum



Alaska Commercial Salmon Harvest from 1900-2018



Alaska Commercial Salmon Harvest from 1900-2018



Management of Enhanced Production

Allocation

Mixed stock fishery

Escapement

Commercial Harvest Allocation of Enhanced Production

Allocation Plans

**5 AAC 24.370 - Prince William Sound Management and
Salmon Enhancement Allocation Plan**

**5 AAC 33.364 - Southeastern Alaska Area Enhanced
Salmon Allocation Management Plan**

Commercial Harvest Allocation of Enhanced Production

Terminal Harvest Area Management Plans

Special Harvest Area Management Plans

AS 16.10.455

5 AAC 40.990

AS 16.10.455(g)(3) and 5 AAC 40.990(13)

“**terminal harvest area**” means an area designated by the commissioner, Board of Fisheries regulation, or department emergency order where **hatchery returns** have achieved a **reasonable degree of segregation** from naturally occurring stocks and may be **harvested by the common property fishery** without adverse effects;

AS 16.10.455 (g)(2) and 5 AAC 40.990(12)

“**special harvest area**” means an area designated by the commissioner or the Board of Fisheries where **salmon returning to a hatchery** may be **harvested by the hatchery operators**, and, in some situations, by the common property fishery;

AS 16.10.440

NOTES TO DECISIONS

Application of common use clause. — Although salmon are subject to the common use clause of the state Constitution while in the natural waters of the state, by its own terms the common use clause does not apply to hatchery fish in terminal areas. [O'Callaghan v. Rue, 996 P.2d 88 \(Alaska 2000\)](#).

Mixed Stock Fishery Management

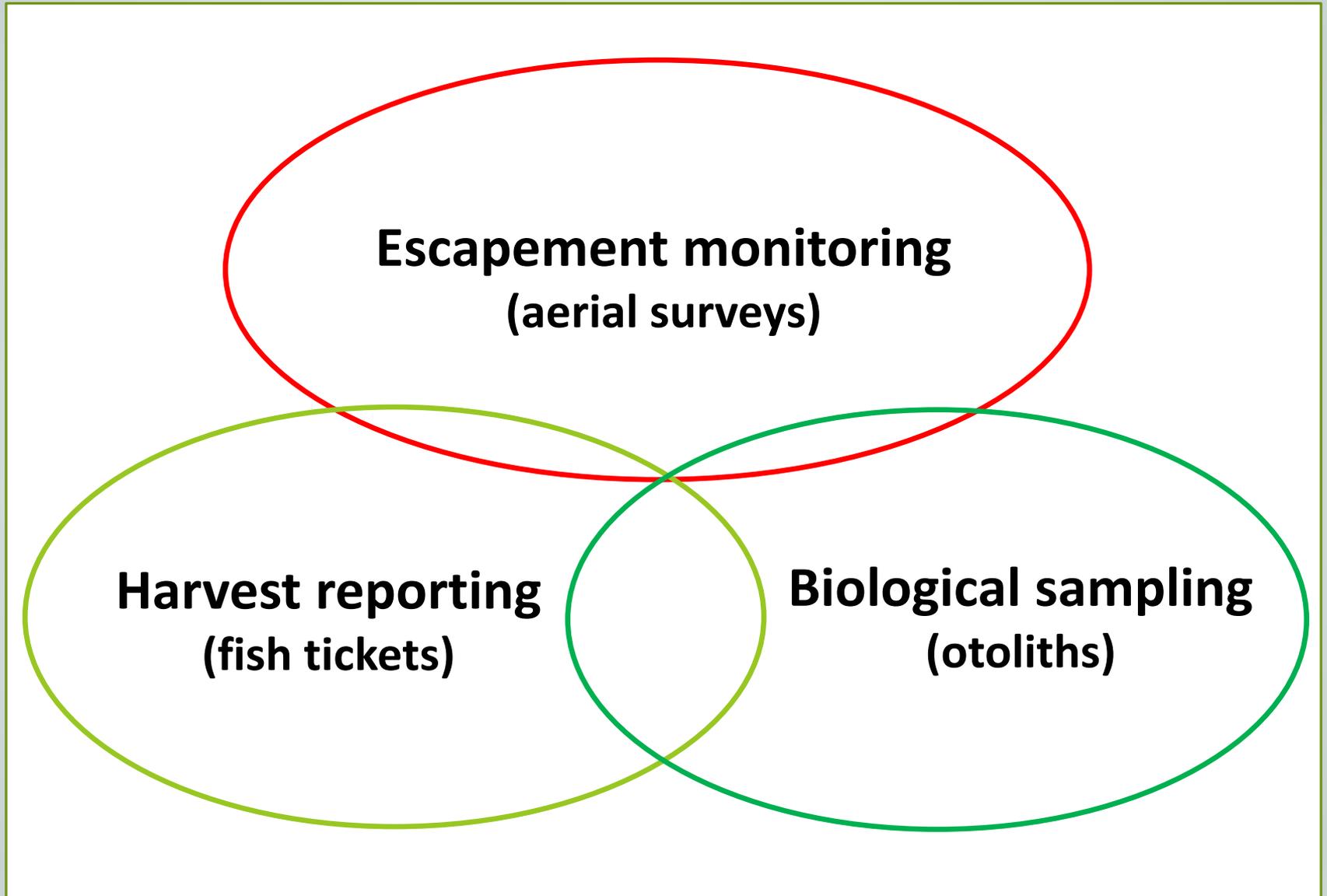
Prince William Sound Pink Salmon

Prince William Sound Coghill Sockeye

Basic Salmon Fishery Management

- Early season management decisions based on preseason forecasts
- In-season fishery assessment tools (aerial surveys, foot surveys, weirs, sonar, etc.)
- Management tools include considerations for time (duration/frequency of opportunity), area, and gear type (management/allocation plan)
- Managers tell where and when fishing can occur

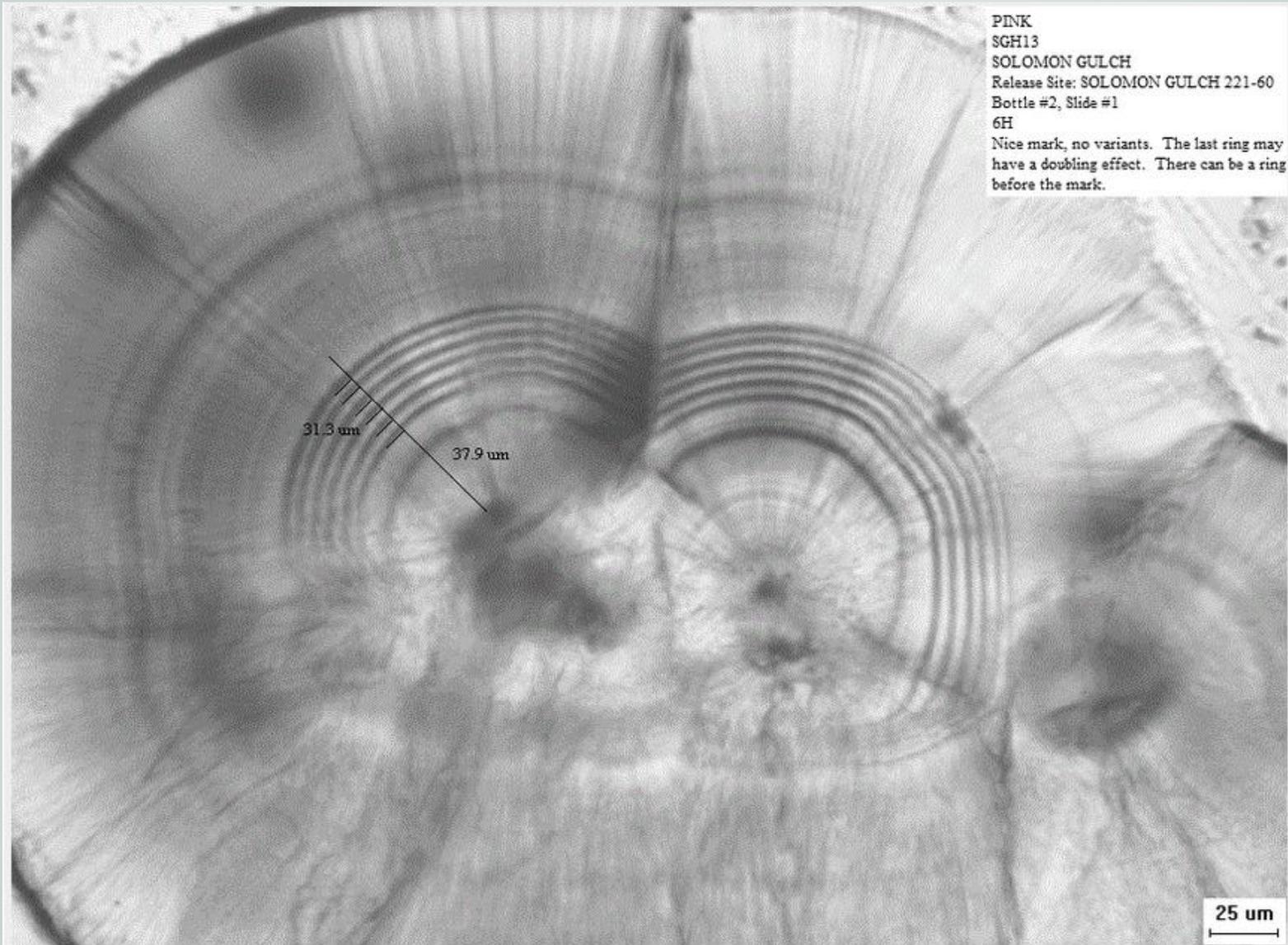
Fishery Assessment Tools

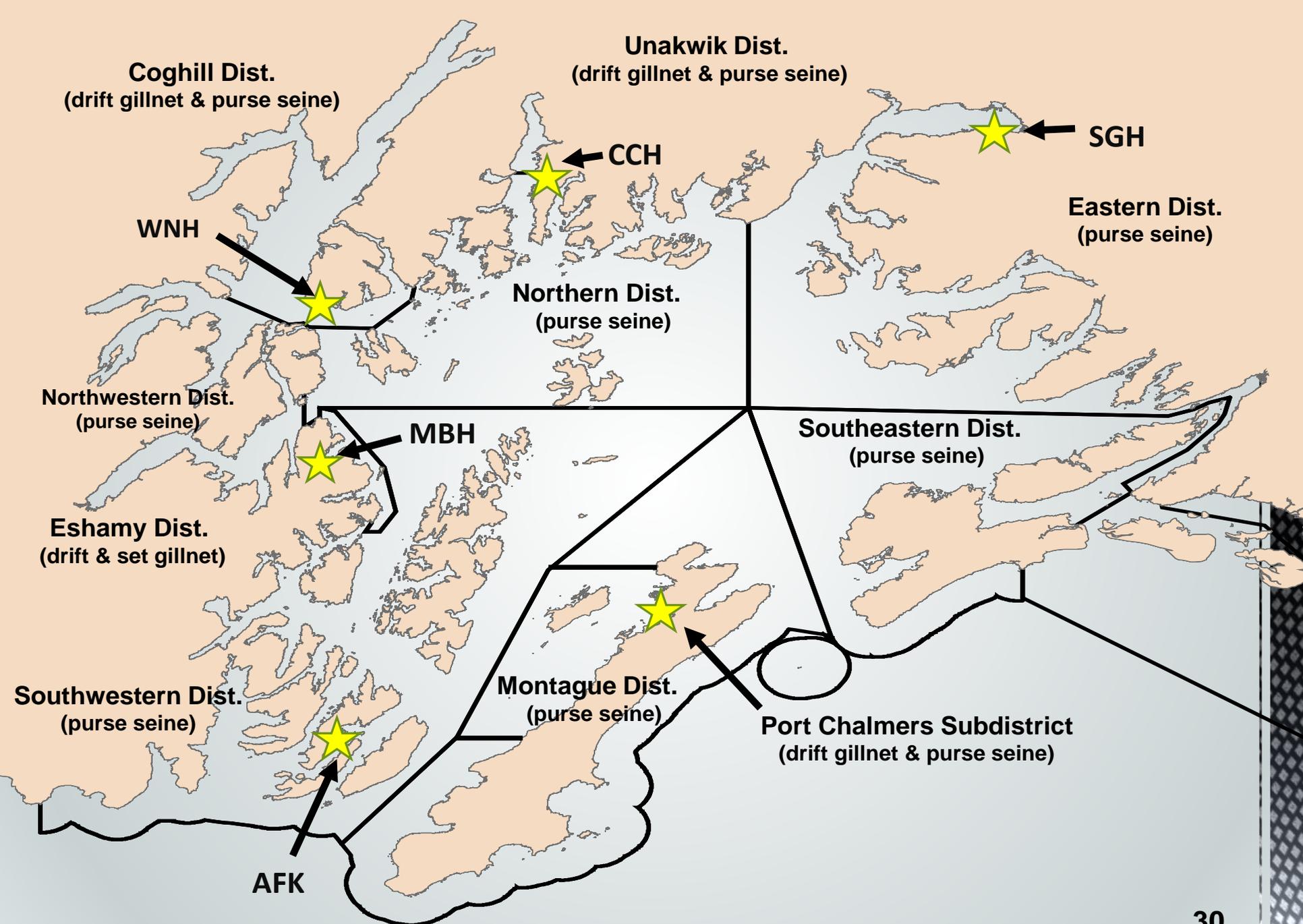


Otolith thermal marks

- Applied to hatchery-released salmon
- unique mark by species and hatchery
- Easily recovered
- Small sample sizes (96 fish) provide stock composition estimates
- Accurate and expedient delivery of information

Otolith Thermal Marks





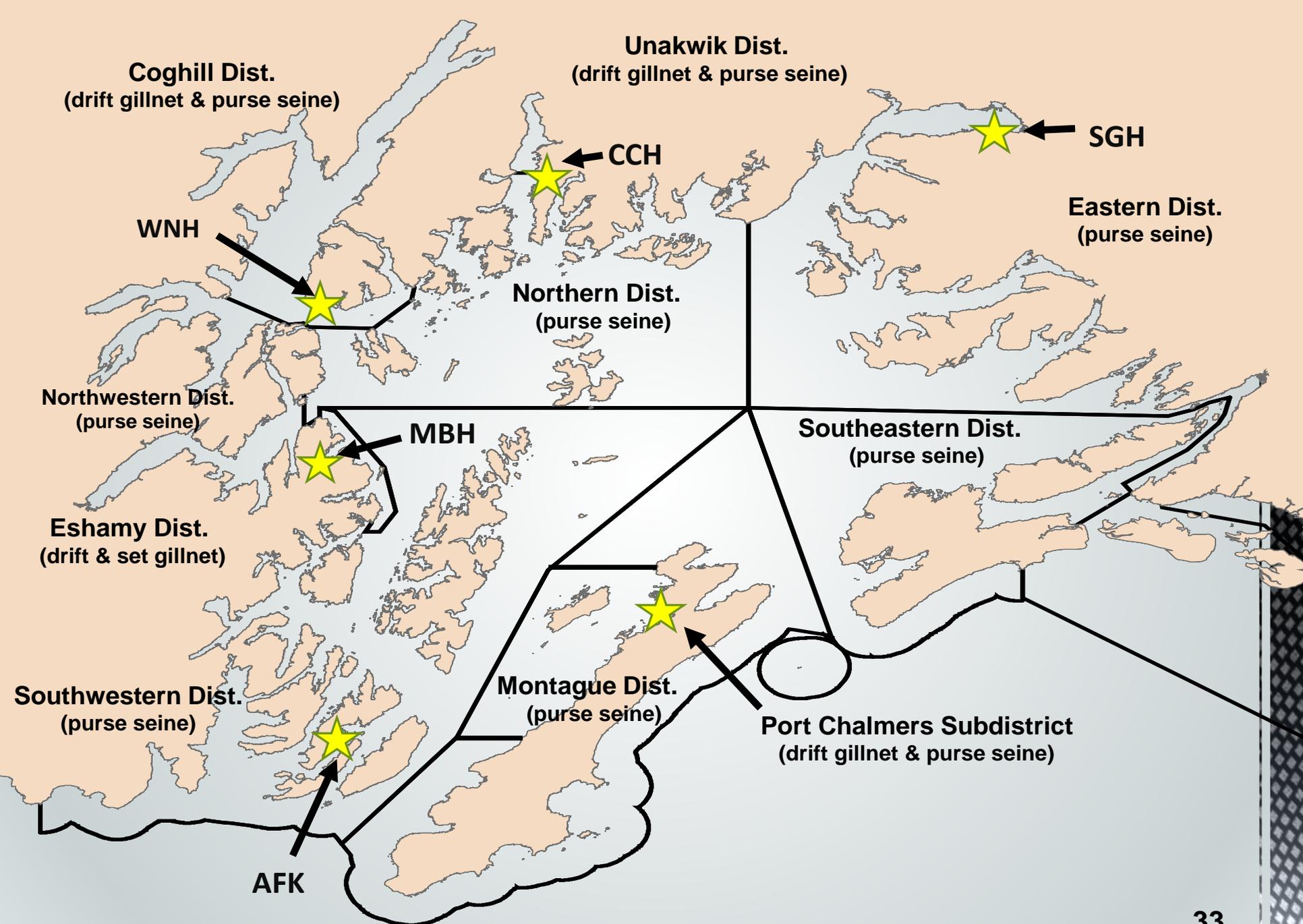
Seining the Capes - PWS Southwest District



Seining the Capes, PWS 2013

Estimated harvest rate of hatchery and natural pink salmon in Prince William Sound, 2013-2015

	Estimated Harvest Rates	
<u>Year</u>	<u>Hatchery</u>	<u>Natural</u>
2013	0.99	0.53
2014	0.98	0.26
2015	0.95	0.40



Management Goals:

- Achieve escapements of wild sockeye
- Harvest wild salmon in excess to escapement needs
- Maximize harvest of hatchery origin chum and sockeye salmon



Escapement

Interception in mixed stock fisheries

Escapement

Strays

ENHANCEMENT PLANNING EFFORTS

Overview of the Regional Planning Teams

Regional Salmon Plans

Annual Management Plans

Alaska's program is stakeholder driven

- **Regional Planning** and Regional Aquaculture Association statutes were enacted giving oversight over salmon fishery enhancement activities to regional stakeholders, primarily limited entry permit holders.
- The users of the resource within each region determine what fishery enhancement is desirable and the ADF&G determines what is appropriate within their mandate to sustain natural production.
- The mechanism for this cooperative effort is the Regional Aquaculture Association working with ADF&G within the **Regional Planning Team (RPT)** process to develop the **regional comprehensive salmon plan**.

Regional Planning Team

AS 16.10.375; 5 AAC 40.300-370

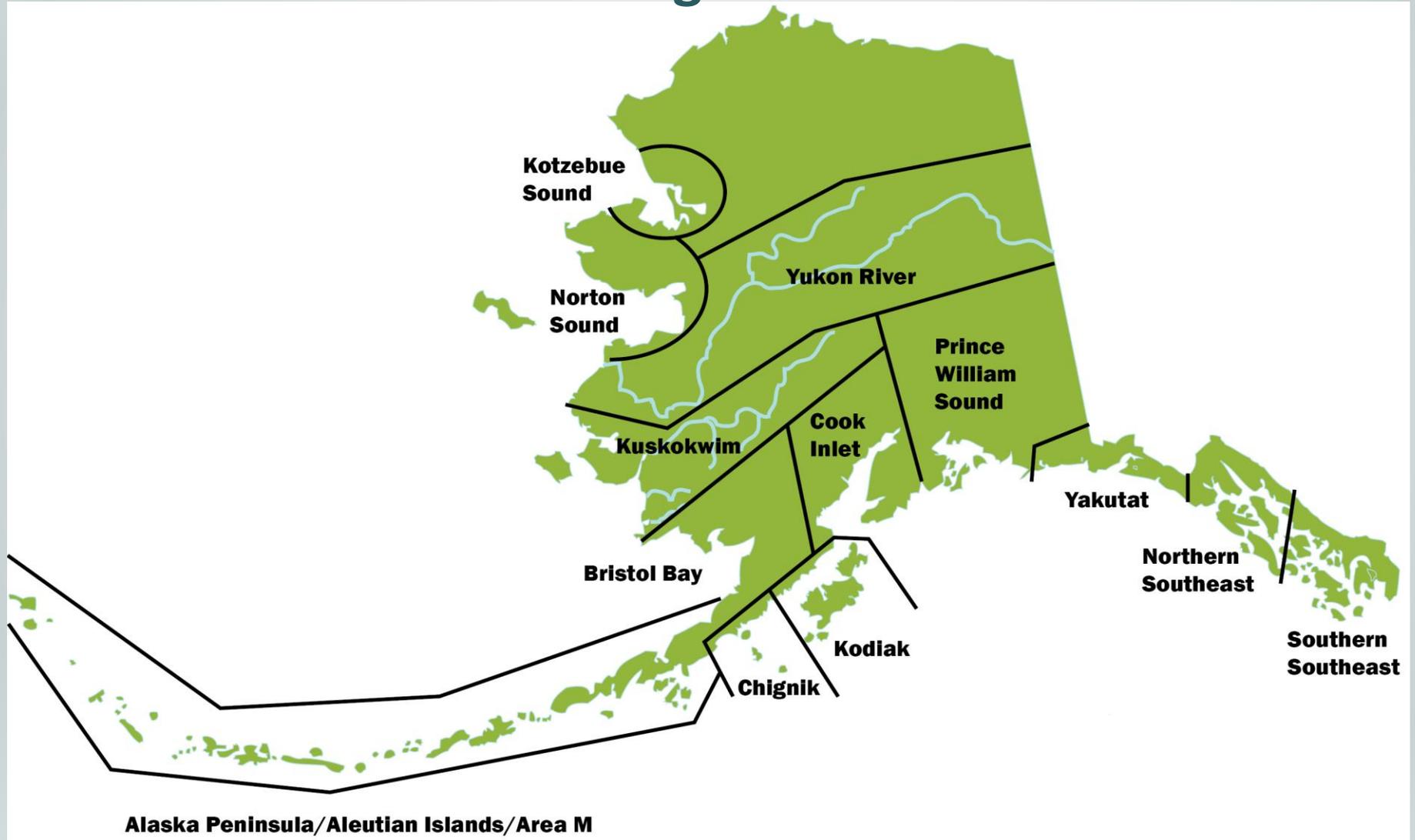
5 AAC 40.340. Regional planning team responsibility.

Each regional planning team shall prepare a **regional comprehensive salmon plan**, for the appropriate region, **to rehabilitate natural stocks and supplement natural production**, with **provisions for both public and private nonprofit hatcheries**. Each region planning team shall consider the needs of all user groups and ensure that the public has opportunity to participate in the development of the comprehensive salmon plan. Each regional comprehensive plan must define regional production goals by species, area, and time. (Eff. 3/31/85, Register 93)

Regional Planning Teams (RPT)

- The RPT is comprised of 6 voting members
- 3 are appointed by the Commissioner of ADF&G
- 3 are appointed by the Regional Aquaculture Association (RAA)
- The primary responsibility of the RPT is regional comprehensive salmon planning
- The RPT is advisory to the ADF&G Commissioner on Salmon Fishery enhancement Planning and Permitting in their region.

Alaska Salmon Fishery Enhancement Planning Regions

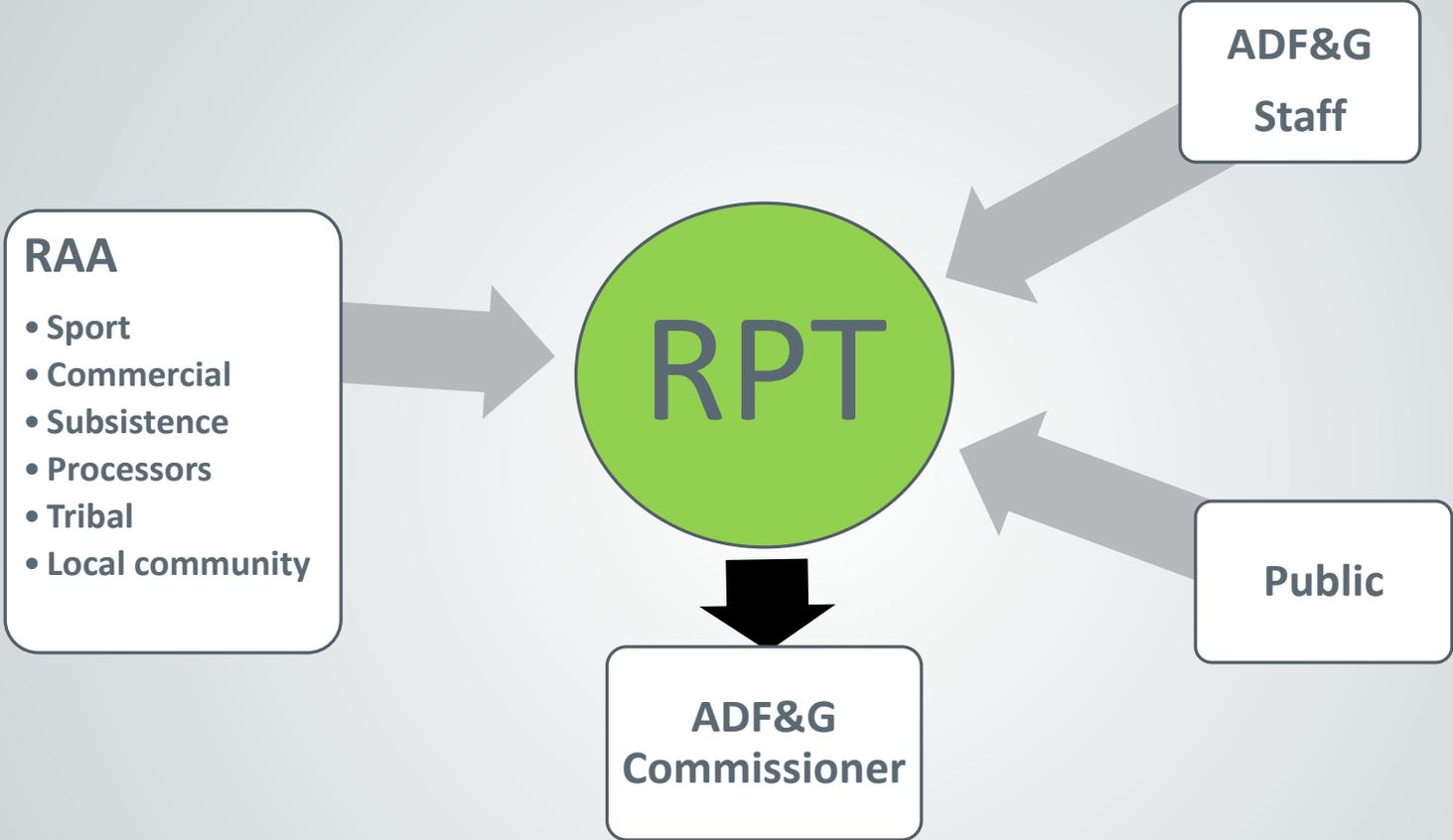


WHAT THE RPT DOES

The RPT meets annually, or as necessary, in order to fulfill its advisory role to the Commissioner of ADF&G on regional salmon fishery enhancement activities by:

1. Drafting the regional salmon plan, and updates, and **providing** them to the Commissioner for approval;
2. Reviewing hatchery permit applications and alteration requests and making **recommendations** to the Commissioner;
3. Reviewing hatchery AMPs and making **recommendations** to the Commissioner.

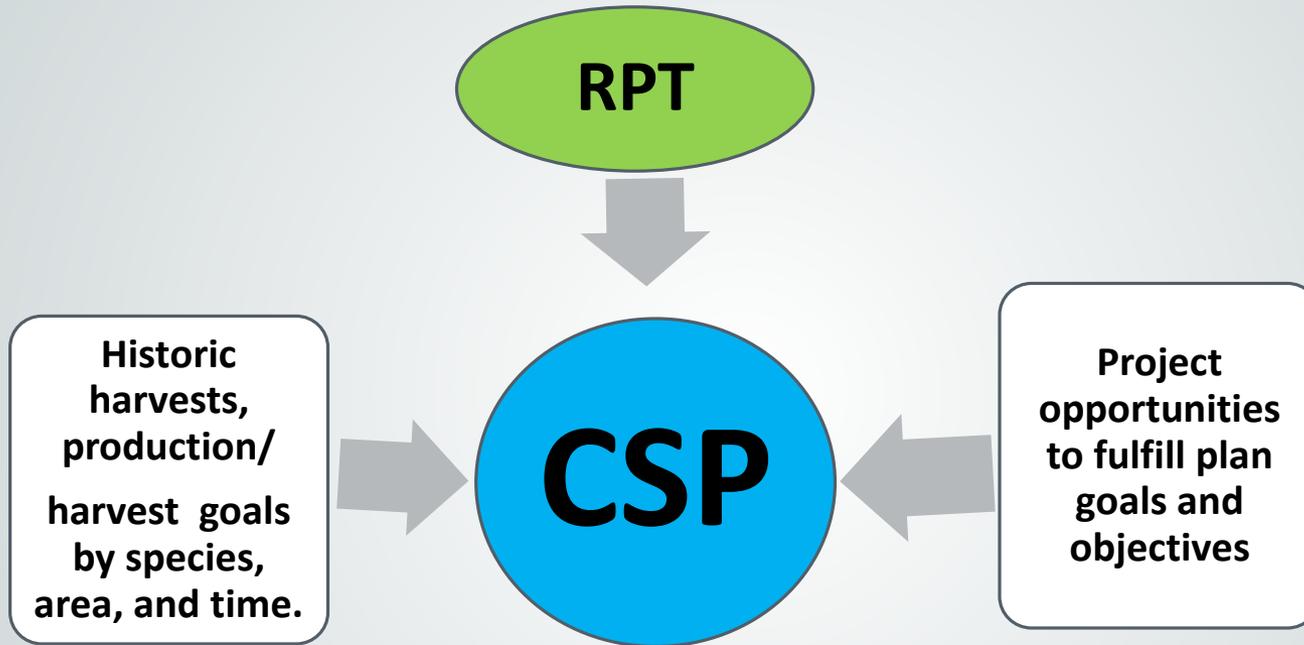
Regional Planning Team Process



Regional Salmon Plans

AS 16.10.375 The commissioner shall **designate regions of the state for the purpose of salmon production** and have developed and amend as necessary a **comprehensive salmon plan** for each region, including provisions for **both public and private nonprofit hatchery systems**. Subject to plan approval by the commissioner, **comprehensive salmon plans** shall be developed by **regional planning teams** consisting of department personnel and representatives of the appropriate qualified regional associations formed under AS16.10.380.

Regional Planning Team Process





Hatcheries

Hatcheries Home

Planning

Regional Planning Overview

Regional Planning Teams

Comprehensive Salmon Plans

Management Plans - Stocking Plans

Regulations and Policies

Permitting

Facilities

Reports

Sport Fish Hatcheries and Stocking

Hatchery Research

FAQs

Contacts

ADF&G Home » Fishing » Hatcheries » Planning

Sign in myADF&G

Hatcheries Planning Regional Planning Teams

Planning Overview

Regional Planning Teams

Comprehensive Salmon Plans

Annual Management Plans

Stocking Plans

Salmon fishery enhancement planning in Alaska is described in law (AS 16.10.375) and is the responsibility of Regional Planning Teams (RPTs). RPTs operate as described in regulation (5 AAC 40.300-370) and prepare regional comprehensive salmon plans, provide recommendations on PNP hatchery permit alterations and applications for new hatcheries, and may also review hatchery annual management plans. RPTs are composed of representatives from regional aquaculture associations and ADF&G staff. All RPT meetings are open to the public and public participation is encouraged.

Regional Planning Teams

Regional planning team meeting notices, agendas, and additional materials will be posted below as they become available.

Southeast RPTs

- The next Southern, Northern, and Joint Southeast Regional Planning Team meetings are scheduled to be held on April 10, 2019, in Juneau. For additional information please contact Chairman Flip Pryor (garold.pryor@alaska.gov).

Yakutat RPT

- The next Yakutat Regional Planning Team meeting has not yet been scheduled. For additional information please contact Flip Pryor (garold.pryor@alaska.gov).

Prince William Sound RPT

- The next Prince William Sound Regional Planning Team meeting is scheduled for April 17, 2019, in Cordova. For additional information please contact Chairman Geoff Clark (geoff.clark@pwsac.com).

Cook Inlet RPT

- The next Cook Inlet Regional Planning Team meeting is scheduled for April 25, 2019, in Kenai. For information please contact Chairman Ethan Ford (ethan.ford@alaska.gov).

Kodiak RPT

- The next Kodiak Regional Planning Team meeting has not yet been scheduled. For additional information please contact Chairman Tyler Polum (tyler.polum@alaska.gov).

Chignik RPT

- The next Chignik Regional Planning Team meeting has not yet been scheduled. For additional information please contact Chairman Chuck McCallum (chuckmccallum@gmail.com).

Kuskokwim RPT

- The next Kuskokwim Regional Planning Team meeting has not yet been scheduled.

Yukon River RPT

- The next Yukon River Regional Planning Team meeting has not yet been scheduled.

Norton Sound/Bering Strait RPT

- The next Norton Sound/Bering Strait Regional Planning Team meeting is tentatively scheduled for November 20, 2019, in Nome. For additional information please contact Chairman Charlie Lean (charlie@nsedc.com).



Hatcheries

Hatcheries Home

Planning

- Regional Planning Overview
- Regional Planning Teams

Comprehensive Salmon Plans

- Management Plans
- Stocking Plans

Regulations and Policies

Permitting

Facilities

Reports

Sport Fish Hatcheries and Stocking

Hatchery Research

FAQs

Contacts

[ADF&G Home](#) » [Fishing](#) » [Hatcheries](#) » [Planning](#)

[Sign in](#)

[myADF&G](#)

Hatcheries Planning

Salmon Fishery Enhancement Plans

Planning Overview

Regional Planning Teams

Comprehensive Salmon Plans

Annual Management Plans

Stocking Plans

Salmon fishery enhancement efforts in Alaska are guided by Comprehensive Salmon Plans, which are prepared by each region's Regional Planning Teams. These plans document enhancement efforts, set production goals, and identify potential for new projects, and are required by law (AS 16.10.375).

Comprehensive Salmon Plans

1. [Southeast Alaska Comprehensive Salmon Plan, Phase III](#) (PDF 2,354 kB)
2. [Yakutat Comprehensive Salmon Plan: Phase II](#) (PDF 4,236 kB)
3. [Prince William Sound/Copper River Regional Comprehensive Salmon Plan, Phase III](#)(PDF 10,133 kB)
4. [Cook Inlet Salmon Enhancement Plan, Phase II, 2006-2025](#) (PDF 9,282 kB)
5. [Kodiak Regional Comprehensive Salmon Plan Phase III, 2010-2030](#) (PDF 3,913 kB)
6. [Chignik Regional Comprehensive Salmon Plan, 1992-2001](#) (PDF 6,246 kB)
7. [Alaska Peninsula/Aleutian Islands/Area M Comprehensive Salmon Plan, 1993-2004](#) (PDF 8,774 kB)
8. [Bristol Bay Comprehensive Salmon Plan](#) (PDF 6,942 kB)
9. [Yukon River Comprehensive Salmon Plan for Alaska](#) (PDF)
10. [Norton Sound/Bering Strait Regional Comprehensive Salmon Plan: Phase II](#) (PDF 4,100 kB)



Annual Management Plan (AMP)

5 AAC 40.840

“This plan must organize and guide the hatchery’s operations, for each calendar year, regarding production goals, broodstock development, and harvest management of hatchery returns.” (3/31/85, Register 93)



Hatcheries

Hatcheries Home

Planning

- Regional Planning Overview
- Regional Planning Teams
- Comprehensive Salmon Plans
- Management Plans**
- Stocking Plans

Regulations and Policies

Permitting

Facilities

Reports

Sport Fish Hatcheries and Stocking

Hatchery Research

FAQs

Contacts

ADF&G Home » Fishing » Hatcheries » Planning

Sign in myADF&G

Hatcheries Planning

Annual Management Plans

Planning Overview

Regional Planning Teams

Comprehensive Salmon Plans

Annual Management Plans

Stocking Plans

The Annual Management Plan (AMP) outlines each hatcheries planned production for the coming year. This includes eggtake goals along with rearing and release activity. The AMPs allow final review of planned activity to insure compliance with previous planning and set a benchmark for end of season review to insure the plan was followed. Alterations to planned activity are allowed in season so long as these changes are formally reviewed and approved prior to execution.

Southern Southeast

- o [2018 Southern Southeast Regional Aquaculture Association \(SSRAA\) AMP \(PDF 1,626 kB\)](#)
- o [2018 Crystal Lake Hatchery AMP \(PDF 298 kB\)](#)

Northern Southeast

- o [2018 Hidden Falls Hatchery AMP \(PDF 989 kB\)](#)
- o [2017 Medveje Creek and Sawmill Creek Hatcheries AMP \(PDF 1,911 kB\)](#)
- o [2018 Haines Projects AMP \(PDF 539 kB\)](#)
- o [2018 Macaulay Hatchery AMP \(PDF 1,558 kB\)](#)
- o [2018 Snettisham Hatchery AMP \(PDF 440 kB\)](#)
- o [2017 Port Armstrong Hatchery AMP \(PDF 910 kB\)](#)
- o [2018 Sheldon Jackson Hatchery AMP \(PDF 1,105 kB\)](#)

Prince William Sound

- o [2018 Armin F. Koernig Hatchery AMP \(PDF 926 kB\)](#)
- o [2018 Cannery Creek Hatchery AMP \(PDF 727 kB\)](#)
- o [2018 Gulkana Hatchery AMP \(PDF 384 kB\)](#)
- o [2018 Main Bay Hatchery AMP \(PDF 440 kB\)](#)
- o [2018 Wally Noerenberg Hatchery AMP \(PDF 917 kB\)](#)
- o [2018 Solomon Gulch Hatchery AMP \(PDF 495 kB\)](#)

Cook Inlet

- o [2018 Trail Lakes Hatchery AMP \(PDF 1,555 kB\)](#)
- o [2018 Tutka Bay Lagoon Hatchery AMP \(PDF 1,456 kB\)](#)
- o [2018 Port Graham Hatchery AMP \(PDF 610 kB\)](#)
- o [2018 Eklutna Hatchery AMP \(PDF 127 kB\)](#)
- o [2018 William Jack Hernandez Sport Fish Hatchery AMP \(PDF 420 kB\)](#)

Kodiak

- o [2018 Kitoi Bay Hatchery AMP \(PDF 1,009 kB\)](#)
- o [2018 Pillar Creek Hatchery AMP \(PDF 1,248 kB\)](#)

Interior

- o [2018 Ruth Burnett Sport Fish Hatchery AMP \(PDF 423 kB\)](#)

Thank you